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ABSTRACT

Many big cities have instituted systematic retention to replace social promotion policies. This study examined the extent to which retaining low achieving students in their current grade for an additional year has a built-in effect on the average reading scores for the grade in which they were retained and the grade they would have been promoted to. Reading achievement means were calculated with and without the inclusion of non-promoted students at one elementary school in Kansas City, Missouri. The analysis indicated that the achievement scores can increase in both the retention grade and the next higher grade when low achievers are not promoted. Some of the findings are spurious since they may reflect only continuing poor performance by the low achievers who were retained. Therefore, such assessments of achievement outcomes should disaggregate the scores of promoted and retained students and should include calculation of annual increase or decline for each group at each grade level. An important effect of retention was that teachers' opportunity for delivering effective instruction at a grade level was enhanced. Given the concern that exists regarding achievement levels in big city schools, decision makers should assess and consider the effects, both spurious and otherwise, of the promotion policies in these schools. Statistical tables are included. (VM)

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THE INHERENT IMPACT OF NON-PROMOTED STUDENTS ON READING SCORES IN A BIG CITY ELEMENTARY SCHOOL

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THE INHERENT IMPACT OF NON-PROMOTED STUDENTS
ON READING SCORES IN A BIG CITY ELEMENTARY SCHOOL

The purpose of this study was to examine the extent to which retaining low achieving students in their current grade for an additional year has a built-in effect on average reading scores for the grades in which students are retained and the next higher grade to which they otherwise would have been promoted.

Many big cities recently have initiated systematic retention guidelines to replace the social promotions policies that were customary during the past few decades. In many cases, as in Kansas City, definite achievement criteria are specified, and many students who fall below the criteria are retained in grade for an additional year. Such retention policies may have a direct positive effect on comparisons of achievement from one year to another.

Because retained students generally have been progressing at a slow rate, their achievement scores usually reduce the average achievement of their class or grade. When they are not promoted to the next grade, however, they then have two years to attain a higher achievement level at the end of the grade, and their slow rate of growth also no longer will be included in the next grade. For example, a student who has been progressing at a rate of six months of growth a year will accumulate 1.2 years of "growth" at the end of two years of enrollment at a given grade level, and his or her six months of growth will no longer reduce the average gain at the next grade of a class that otherwise may be averaging one year of growth per year in school.

To assess some of this possible impact of retention policies at the class and grade levels, reading achievement means were calculated with and without the inclusion of non-promoted students at one elementary

school in the Kansas City, Missouri School District. The first set of calculations involved straightforward computation of end-of-year averages for classes enrolling retained students, with and without the non-promoted students included.* The results are shown in Table 1.

As indicated in Table 1, there were eight classes with retained students, four of which (B, D, E, and H) had two or more retained students. Students in class B had an average score of 1.26 years; without the two retained students, the average was 1.17, about one month lower. Similarly, classes D and E had respective scores about one month lower than otherwise, when their retained students were eliminated from the tabulation. Class H had virtually the same score with and without its two retained students. Thus three of the four classes with two or more retained students had end-of-year reading scores about one month higher than otherwise when the retained students who had a second year to reach a higher achievement level were included in the analysis.

Table 2 portrays the same underlying data in a different way, separating the average reading scores of retained and non-retained students in the eight classes shown in Table 1. In the three classes (B, D, and E) in which scores were lower when retained students were excluded from the calculations, the retained students (who had an additional year in the grade) had average reading scores considerably higher than their non-retained peers. Two of these classes (B and E) were compensatory-

* Reading scores are grade-equivalent scores from the Iowa Test of Basic Skills. Grade-equivalent scores are not the most suitable or useful measure for portraying student achievement or calculating growth. However, they are adequate for our purpose in this paper, and they have the advantage of comparability with the district's reporting system in considering possible contributions of retention to school and district levels, gains, and losses.

education classes taught by teams of two experienced teachers specially trained to help low achievers. The high scores of the retained students in these two classes probably reflect in part the special help they received in the compensatory education program, not just the fact that they had an extra year to attain higher scores than other initially-low achieving peers in their classes.

To estimate separate effects of the extra year in grade and the compensatory help provided for the retained students, we calculated the average annual gain that seventeen of the retained students (for whom appropriate data were available) had attained in their pre-retention years and the actual gain in the retention year. The first average was 3.78; the second was 7.82. Subtracting the former score from the latter and multiplying by the number of retained students (17), we conservatively estimated that the retention year by itself was responsible for a minimum of 64 months of gain (3.78 x 17), while the compensatory program may have been responsible for 69 months of gain (7.82 - 3.78 x 17). The 64 months of gain attributable to the retention year alone then can be allocated across the 167 students in the eight classes (subtracting the three non-retained students without appropriate data), thus yielding an estimated increase of slightly more than a third of a month per student attributable to retention without any increase in rate of learning among retained students.

The third set of calculations also involved computation of average annual growth scores for retainees up to the year they were retained, followed by addition of this score in the next grade to which they otherwise would have been promoted. Then, these projected scores were added to the next grade, and average scores were calculated and compared with the actual scores. The results, as shown in Table 3, indicated that the actual score at the third grade was about seven-tenths of a month higher

than it would have been had three second-grade retainees been promoted and achieved at the same rate they had in earlier grades, while the fifth-grade average was about eight-tenths of a month higher than would have been true otherwise adding two fourth-grade retainees. For the second grade, in which this analysis adds fourteen first-grade retainees, the difference was a whopping fourteen months. For this grade, there were 67 students who contributed to the (actual) average score of 3.32; had only fourteen first-grade retainees been promoted and achieved at their previous rate, the average would have been 1.89--considerably below rather than considerably above the national average of 2.9. Overall, the average increase (unweighted by grade-level enrollment) across the five grades attributable (following the logic of this analysis) to retention is .33 months in average reading score ([1.48 - 1.45] + [3.32 - 1.84]...+ [5.00 - 4.82] /5). Thus the school as a whole gained a third of month in reading associated with retention of only 24 students (out of an enrollment of 454), assuming that the retained students would have achieved at their previous rate of annual growth had they been promoted.

The preceding analyses illustrate how achievement scores can increase in both the retention grade and the next higher grade when low-achievers are not promoted. Much of this effect would be present even if retained students continued to achieve at the same low rate they had in previous years. Both aspects of achievement gain (i.e. in the retention grade and the next higher grade) are spurious in the sense that they may only reflect continuing poor performance by low achievers who were retained. We should add that another indirect effect of retention may be to make the teacher's job more manageable in the next grade by reducing the number of students far below grade level. To the extent that this enhanced teachers' opportunities for delivering instruction at that grade effectively, gains may be registered in their students' achievement. We do not consider such an effect to be spurious.

We also should emphasize that we have not presented data dealing with the effectiveness of the promotions policy. Assessment of the policy and its implementation would require longitudinal data on the subsequent performance of retainees, as well as other considerations such as the extent to which retention enhanced or detracted from implementability of the curriculum, the degree to which beneficial learning opportunities were for provided for retainees, the consistency with which the policy was applied, the attitudinal effects on both retained and non-retained students of rigorous retention practices as well as contrasting social promotions policies, and other matters. Our major conclusion is simply that retention of a relatively small number or percentage of students can result, in and of itself, in spurious increase in average achievement scores at both the retention grade and the next grade, regardless of whether retainees or the school as a whole did or did not benefit in other ways.

The possible magnitude of these spurious effects can be illustrated in a plausible hypothetical example. Suppose that following the implementation of a rigorous promotions policy, fifteen percent of the students are retained-in-grade in a school with scores at exactly the national average in each grade and an overall enrollment of exactly one hundred students. Suppose further that the average rate of growth among the retained students continued to average seven months of growth during their retention year. At the end of that year, the average retained student will have gained fourteen months during his or her two years in that grade--four months higher than the school average of ten. Spreading four months of gain registered by each of fifteen students across the one hundred students in the school produces six-tenths of a month increase for each student.

Similarly, the next highest grade registers a gain of three months for each of the fifteen students, because their actual rate of seven

months each no longer is calculated in the average for that grade. Spread across one hundred students, there is an average increase of .45 of a month per student. Adding the .6 of a month from the calculations in the preceding paragraph, the average score in the school is 1.05 months higher due to the non-promotion of fifteen percent of the student body.

Theoretically, one could carry the spurious effects of promotions policies to an extreme by never promoting any student who scored below the 50th percentile. This would ensure that many students would score somewhat above the 50th percentile, some would score much higher, and students retained in grade would have as many years as they needed to reach the 50th percentile. Before long, achievement scores at poverty schools would rise markedly, even though little or nothing had been accomplished in improving students' yearly rate of growth.

Spurious achievement effects of promotions policies also can be detected at the school district level. As reported, for example, by McDaniel (1986), large gains in reading and mathematics achievement have occurred in Atlanta. But McDaniel's data also suggest that spurious effects of promotions practices may account for a significant part of this increase. These data show that among the 3,325 students who entered first grade in 1980 when Atlanta's Pupil Progression Policy was introduced, 34 percent subsequently were retained in grade for one or more years. The average NCE reading score for the 2,198 students who had never been retained was at the 61st percentile level at the end of the fifth grade in 1985, while the average score of the 1,127 students who repeated one or more grades was at the 45th percentile. Since the latter average represents one, two, or, in a few cases, three additional years of schooling below the fifth grade, average scores at each grade level are likely to be higher than would have been true without the new promotions policy,

even if each student had exactly the same rate of growth per year as he or she would have registered following the traditional social promotions policy.

Since about one-third of Atlanta's 1980 first-graders subsequently have been retained in grade, it is obvious that the positive effect on achievement averages could be major. For example, assume that the 1,127 students who were first-graders in 1980 but were subsequently retained in grade would have had an average reading score at the 40th percentile at the end of the fifth grade, had they not been retained. This assumption is conservative inasmuch as their actual average percentile is 45 after one or more years of retention in a lower grade. Combined with the average score of 61 for fifth-graders who had never been retained, the overall group of 1980 first-graders would have an average reading score at about the 54th percentile, which would be far below the 70 percent of fifth graders at or above the national average reported for Atlanta fifth graders in 1985.

Given the widespread concern that exists regarding achievement levels in big city schools and the likelihood that efforts to improve these levels as well as funding to do so probably will increase in future years, decisionmakers should assess and consider the spurious effects, if present, of promotions policies in these schools. Failure to identify such effects where they exist can lead to overconfidence concerning the extent to which instructional problems are being addressed and to positive evaluation of instructional changes that may not have been effective. Misinterpretation of the extent or the source of progress being registered in turn can divert the change process in nonproductive or even dysfunctional directions. Assessment of achievement outcomes should, at a minimum, disaggregate the scores of promoted and retained students, and should include calculation of annual increase or decline for each group at each

grade level in each school. Disaggregation and longitudinal assessment along these lines would provide decisionmakers with an improved basis for assessing the independent effects of significant efforts to improve the effectiveness of instruction in big city schools.

REFERENCES

McDaniel, A. 1986. The long-term effects of the pupil progression policy on academic achievement. Paper presented at the annual meeting of the American Educational Research Association. San Francisco, April.

Table 1

Comparison of Average Reading Scores With and Without Inclusion of Retained Students in Eight Classes

Class	With Retained Students	Without Retained Students	Number of Retained Students
A	1.70	1.70	1
B	1.26	1.17	3
C	1.52	1.54	1
D	1.44	1.32	9
E	3.50	3.40	2
F	2.70	2.69	1
G	3.30	3.30	1
H	3.40	3.41	2

Table 2

Average Reading Scores of Retained and Non-Retained Students in Eight Classes

	Non-Retained		Retained	
	x	(N)	x	(N)
A	1.70	(20)	1.70	(1)
B	1.17	(17)	1.80	(3)
C	1.54	(19)	1.10	(1)
D	1.32	(15)	1.63	(9)
E	3.40	(18)	4.40	(2)
F	2.69	(21)	2.80	(1)
G	3.30	(20)	3.25	(1)
H	3.41	(20)	3.20	(2)
	150		20	

Table 3

Average Reading Scores at Five Grade Levels With and Without Adding (Projected) Scores of Retained Students to the Next Highest Grade Assuming Continuation of Their Previous Rate of Annual Increase

Grade	Actual Scores Without Retained Students Added to Next Grade	Projected Scores if Retained Students had been Promoted
1	1.48	1.45
2	3.32	1.89
3	3.65	3.58
4	4.00	3.97
5	5.00	4.82